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PUC PROJECT NO. 51840

RULEMAKING ESTABLISHING	§	BEFORE THE
ELECTRIC WEATHERIZATION	§	PUBLIC UTILITY COMMISSION
STANDARDS	§	OF TEXAS

LOWER COLORADO RIVER AUTHORITY'S RESPONSE TO COMMISSION STAFF'S DISCUSSION DRAFT AND QUESTIONS FOR COMMENT

TO THE HONORABLE PUBLIC UTILITY COMMISSION OF TEXAS:

The Lower Colorado River Authority (LCRA) appreciates the opportunity to offer comments in response to the Staff of the Public Utility Commission of Texas (Commission) discussion draft and questions in this project and proposes alternative rule language for the Commission's consideration in developing a clear and effective weatherization standard for generation resources in the Electric Reliability Council of Texas (ERCOT).

I. <u>EXECUTIVE SUMMARY</u>

- An effective and enforceable weatherization rule that complies with Senate Bill 3 should focus on preparation—specifically, the steps that a resource owner can and should take in order to best position its units to perform in a manner consistent with their design and operating parameters.
- A future study to dictate a range of weather conditions under which resources must perform to a designated output level over a staggered implementation timeline will not produce the reliable outcomes that are needed in ERCOT today. Instead, in the near term, the Commission should require immediate compliance with a rule mandating robust operational readiness procedures based on historical experience and industry best practices.
- Any reliability standard that imposes a strict liability requirement to perform under a specified range of weather conditions will impose substantial retrofit costs on owners of dispatchable thermal generation. Because no cost recovery mechanism currently exists in the market to support the reasonable recovery of that investment, such a rule will have deleterious consequences for reliability if it becomes uneconomic for those resources to continue operations. A performance-based standard is appropriate for new resources, and only if a cost recovery mechanism is implemented for existing resources.

• LCRA supports the concept of compensating resource owners who make investments that are designed to maximize performance under the most extreme weather conditions. Weatherization requirements related to Black Start Service, however, should be examined further as part of a separate future project.

II. RESPONSE TO QUESTION 1

Question 1:

What is the availability of statistically reliable weather information from, e.g. the American Society of Heating, Refrigeration and Air Conditioning Engineers; National Weather Service; or other sources for the ERCOT power region? Please share the source of that information.

The National Weather Service and the National Centers for Environmental Information are the primary entities LCRA is aware of that maintain relevant weather data. LCRA's Hydromet also maintains meteorological and precipitation data for the Colorado River basin.

III. RESPONSE TO QUESTION 2

Question 2:

Do existing market-based mechanisms provide sufficient opportunity for cost recovery to meet the weather reliability standards proposed in the discussion draft? If not, what cost recovery mechanisms should be included in the proposed rule?

No. As described in further detail below, the baseline reliability standard proposed in the discussion draft dictates performance requirements based on an external weather study that has not yet been conducted—the results of which may or may not be consistent with the design criteria and capability of a given generating facility. Accordingly, there is a significant risk that the performance standards a generator could be required to meet will be more stringent than the unit was designed for, thereby requiring costly capital additions and substantially increased operations and maintenance expenditures. The current wholesale market design does not provide for recovery of such costs. Without a wholesale revision to the proposed rule or a new cost recovery mechanism, many units will be forced out of operation if they cannot meet this newly defined baseline.

IV. COMMENTS ON DISCUSSION DRAFT

Subsection (c) Weather study

The discussion draft proposes that the weather study must address a comprehensive range of weather scenarios in ERCOT that may impact generation or transmission facility performance.

The required study parameters include temperature, wind, humidity, precipitation, and duration.

LCRA agrees that these are relevant factors to consider in beginning to differentiate between "normal" or "expected" and "extreme" weather scenarios, but stresses that the combined effects of these factors on a generating facility are also critically important for the Commission to understand and evaluate. For example, a dispatchable thermal generator may be designed to operate at a given extreme low temperature (e.g., 10 degrees Fahrenheit), but that unit may not be capable of withstanding the combined effects of 10 degree temperatures *and* 30 mile per hour winds *and* freezing precipitation *and* a sustained multi-day event with all of those conditions present—no matter what additional winter preparations the operator undertakes. As such, a study indicating that a "95th percentile" probability scenario for a given region of Texas may involve temperatures ranging from 10 degrees to 110 degrees Fahrenheit could give rise to an incorrect assumption that such a hypothetical thermal unit could actually perform in these conditions, if temperature is considered in isolation.

For these reasons, the Commission should explicitly direct ERCOT to study the coincidence and combined impact of these different weather-related criteria in developing the 95th, 97th, and 99th percentile cases. Only once that comprehensive, multi-factor analysis is performed can ERCOT begin to understand what constitutes a "normal" weather case from the standpoint of

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¹ And whether a unit can *operate* in 10 degree weather is a very different question than whether the unit can *start* in 10 degree weather, after a failed start or trip results in a loss of ambient heat.

a resource owner conducting baseline, day-to-day operations, as compared to what additional preparations are necessary for a unit to perform in extreme conditions. But for purposes of implementing this mandatory weatherization rule, the focus should be on the preparations themselves—not the external factors that the preparations are designed to counteract, as discussed further in the next section.

Subsection (d) Weather reliability standard for a resource

(1) Basic weather reliability standard

As drafted, the rule imposes as a baseline compliance standard the requirement that a generation entity must maintain weather preparation measures that will ensure a specific outcome—namely, that the resource will provide service at a fixed (but unspecified) output level under the 95th percentile of each of the extreme weather scenarios studied (a 95th percentile case that has not yet been performed and the results of which are not yet known). In other words, the draft rule requires a performance outcome under enumerated weather conditions that have yet to be determined. The rule provides no indication that the required generation output level will account for unit-specific variations or capabilities, such as design criteria or geography.² This entire approach is problematic and needs to be reevaluated.

A resource owner can never guarantee that an existing unit will perform to withstand weather conditions that are "to be determined" in the future. But even if those conditions were identified before the rule is made effective, compliance with the rule as drafted would still hinge on external weather factors, which are inherently beyond the resource owner's control. Such a rule

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² To the extent the required resource output would be its nameplate capacity, or the amount of capacity assumed to be available for a certain resource type in ERCOT's resource adequacy reports (such as the Capacity, Demand and Reserves Report or the Seasonal Assessment of Resource Adequacy), those assumptions should be made explicit so that stakeholders can appropriately comment on such a proposal.

would not withstand scrutiny. Instead, the rule should adhere to the requirements of Senate Bill 3 and address what <u>is</u> within the resource owner's control: *preparation*.³

At most, a resource owner can take reasonable steps to prepare its generating facility to perform in conditions that are consistent with the unit's design. The reasonableness of a resource owner's preparation is determined by good utility practice, which in turn is informed by industry lessons learned and the historical experience of a particular unit. But despite the clear mandate in Senate Bill 3, the current version of the rule proposes no substantive requirements relating to resource preparation. This should be the primary focus of the rule—not strict liability performance requirements based on undefined weather scenarios and arbitrary implementation timelines.⁴ A rule that instead requires generation entities to prepare for the types of performance issues that have been experienced by their specific units can be met on a much quicker timeline than a set of requirements based on future study and unknown variables.

In Appendix A to these comments, LCRA proposes alternative language that is consistent with the Legislature's directive and that can be implemented under the required statutory timeframe.

(2) Enhanced weather reliability service

As LCRA interprets this section of the draft rule, the Commission would create a new, "enhanced" standard that would apply going forward for facilities that are either designed to withstand more extreme weather conditions, or that can be retrofitted to withstand such

³ Senate Bill 3 requires, in relevant part: "The commission by rule shall require each provider of electric generation service described by Subsection (a) *to implement measures to prepare the provider's generation assets* to provide adequate electric generation service during a weather emergency according to reliability standards adopted by the commission." (emphasis added).

⁴ LCRA re-urges its prior comments with regard to the practical constraints that will prevent generation entities from making significant upgrades to their facilities on the accelerated timeframe contemplated in the draft rule, including the need to perform preliminary engineering studies, pandemic-driven supply chain and contractor limitations, and maintenance outage coordination requirements.

conditions—along with a financial mechanism to compensate the resource owner for the additional value that the unit provides to the market. LCRA fully supports the concept of providing market-based incentives for enhanced resource availability, including for weatherizing facilities to be able to perform in more extreme weather conditions. This approach complements the proposal that LCRA and others have outlined for the Commission's consideration regarding a "firm fuel" service, which is necessary to help offset the additional costs that these resource owners incur to increase generation resiliency during extreme weather events and recognize the value that these resources provide the grid.

(3) Black Start Service (BSS) weather reliability standard

As drafted, the rule would require providers of Black Start Service to weatherize their units to meet the most extreme potential weather conditions (presumably both hot and cold). From a practical implementation standpoint, this proposal has several deficiencies. For example, a unit can be weatherized to withstand the most extreme cold winter weather and hurricane-force winds through the construction of permanent shielding structures (e.g., hurricane-resistant walls that will insulate the unit), but those same measures would create serious problems for the unit to perform during an extreme summer weather condition (by trapping heat). In addition, in a cold weather black start scenario, a resource that is capable of *operating* under a given set of conditions may not be capable of *starting* in the same conditions (and this cannot be replicated in a test environment, for obvious reasons). Therefore, if the designated black start units are offline or trip, all the weatherization in the world may still not be sufficient to bring a frozen unit back online until weather conditions improve. Moreover, the level of weatherization of a black start resource may be entirely irrelevant in a cold weather black start if the next start resource (which the black start resource is supposed to repower) is offline and frozen.

At this stage, it would be more prudent for ERCOT to evaluate its existing procedures and consider, for example, whether to procure different black start resources for summer and winter scenarios, or to reexamine how it considers next start resources, before making any rule changes that will affect the next Black Start Service procurement contract period. Fundamentally, an evaluation of black start scenarios is more complex and dependent on myriad factors beyond just generation resource weatherization (including on-site fuel requirements and system topology). Rather than hastily adopt a new set of criteria that may not account for the full range of considerations that are integral to a robust and effective black start plan, the Commission should consider directing ERCOT to study its existing black start plans and procedures and report on any proposed recommendations for improvement in a separate, future project.

Section (e) Implementation of weather reliability standards for a generation entity

If the rule is adopted as proposed and resource owners are required to retrofit their existing units to meet new design criteria under a "basic" weather reliability standard, this proposed implementation schedule is unreasonably compressed. As LCRA detailed in its initial comments in this project, existing resource owners are facing serious supply chain constraints and will be competing for the limited number of vendors who perform the types of engineering services and maintenance activities necessary for major weatherization projects to be completed.

If instead the rule is revised to require operational readiness rather than specific performance, then the timelines proposed in the rule are achievable. In fact, all resources—regardless of their nameplate capacity—should be expected to comply with appropriate summer and winter weather readiness procedures as soon as the rule is in effect in accordance with the Administrative Procedure Act.

Subsection (f) Compliance with weather reliability standards for a generation entity

(1) Compliance study

This section of the rule proposing that each resource owner perform a third party "study that confirms compliance with the applicable weather reliability standard" for each resource it controls should be further refined. As drafted, this provision does not give fair notice to resource owners about what is required and lacks sufficient guidance for the Commission to meaningfully enforce it. In addition, it exceeds the authority granted to the Commission under Senate Bill 3, which authorizes the Commission to require a third party engineering assessment only in limited circumstances relating to "repeated or major weather-related forced interruptions of service."

More importantly, it is unclear that the contemplated study could even be performed. No engineer can confirm that a generation resource will perform to a specific level of compliance in various weather conditions unless and until those conditions are actually experienced. In other words, all aspects of a plant's design can be functionally tested *except weather protection*. There is simply no way to simulate extreme weather conditions, and therefore no practical way to perform this proposed engineering verification.

Instead, what is known—or can generally be determined for most dispatchable thermal generating facilities—is the specific minimum or maximum temperature at which the subsystems or specific components of a unit are designed to perform. This is a limited criterion that does not account for the cumulative impact of other factors like wind, precipitation, or event duration, and it does not necessarily translate to a consistent design temperature for the generation facility as a whole (i.e., the design condition may not be the same across different subsystems or equipment). Typically, if a plant does have an overall design minimum or maximum temperature, it would be

⁵ PURA § 35.0021(d)(1).

determined by the "most limiting" individual subsystem rating. What this type of assessment could inform is a better set of expectations for unit availability under different possible weather scenarios, which would be useful in improving ERCOT's seasonal weather forecasts and ultimately serving as the basis for developing an "enhanced" weather reliability service in the future.

(2) Annual report

Current ERCOT Protocols already require each generation resource entity to provide ERCOT its weatherization plan, which must include a description of the generation resource's practices and procedures undertaken in preparation for winter and summer weather and during specific occurrences of extreme weather.⁶ In addition, generation resource entities must submit to ERCOT declarations regarding their detailed preparations for both summer and winter weather, signed by an officer or executive.⁷ If this proposed section of the rule contemplates a different or enlarged set of requirements than what are required under Section 3.21 of the ERCOT Protocols, further information and clarity is required.

V. <u>CONCLUSION AND PRAYER</u>

LCRA appreciates the Commission's consideration of these comments and looks forward to participating in further discussions with Commission Staff and stakeholders to develop effective and practical solutions to enhance system resiliency.

LCRA COMMENTS

⁶ ERCOT Nodal Protocols Section 3.21.

⁷ *Id*.

Respectfully submitted,

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Appendix A: Redline of Discussion Draft

§25.55. Weather Emergency Preparedness.

- (a) **Application.** This section applies to the Electric Reliability Council of Texas, Inc. (ERCOT) and to generation entities and transmission service providers in the ERCOT power region.
- (b) **Definitions.** In this section, the following definitions apply unless the context indicates otherwise.
 - (1) **Generation entity** Any ERCOT-registered Resource Entity with one or more ERCOT-registered Generation Resource or Energy Storage Resource, as those terms are defined in the ERCOT Protocols.
 - (2) Inspection The activities that ERCOT engages in to determine whether a generation entity is in compliance with subsection (d) of this section or whether a transmission service provider is in compliance with subsection (i) of this section. An inspection may include site visits; assessments of procedures; interviews; and information provided by a generation entity or transmission service provider, including the results of inspections conducted by the generation entity or transmission service provider or its contractor. ERCOT may conduct inspections using both employees and contractors.
 - (3) **Resource** A Generation Resource or Energy Storage Resource as defined in the ERCOT Protocols.
 - (4) **Weather preparation measures** Measures that a generation entity or transmission service provider may take to improve the function of a facility in extreme weather

conditions, including weatherization, fuel security, staffing plans, operational readiness, and structural preparations.

- (c) **Weather study.** ERCOT, in consultation with the Office of the Texas State Climatologist, must prepare a weather study that includes statistical probabilities of a range of extreme weather scenarios for the weather zones that ERCOT establishes for this study.
 - (1) Weather study criteria. The weather study must include statistical probabilities for a range of weather scenarios in the 95th, 98th, and 99th percentile probabilities for the established weather zones. The weather study must address a comprehensive range of weather event scenarios that may impact transmission and generation performance in the ERCOT power region. These scenarios must include, at a minimum, parameters for high and low temperatures, wind, humidity, precipitation, and duration, and must consider the cumulative effect of these weather parameters in determining the 95th, 98th, and 99th percentile cases.
 - (2) Filing and approval. ERCOT must file with the commission the first weather study consistent with this subsection no later than January 1, 2022 and then file with the commission a new weather study five years thereafter. ERCOT must review data relevant to the weather study at least annually. If changes to weather occur that materially affect the ability of generation entities and transmission service providers to meet the weather reliability standards in this section, ERCOT must promptly prepare and file with the commission before the otherwise applicable five-year deadline. A weather study must be approved by the commission with or without modifications for it to affect compliance with

the requirements of this section. The commission will approve compliance deadlines as part of its approval of any study filed after the initial weather study.

- (d) Weather reliability standard for a resource. A generation entity must comply with the following standards.
 - (1) Basic weather reliability standard. A generation entity must maintain implement weather preparation measures to prepare its generation assets to provide adequate electric generation service during a weather emergency. The measures must be based on the resource's operating history, applicable NERC reliability standards, and lessons learned from issues identified during prior severe weather events, considering good utility practice. that reasonably ensure that its resource can provide service at the resource's applicable rated capability as defined by ERCOT under the 95th percentile of each of the extreme weather scenarios specified in the weather study approved by the commission under subsection (e) of this section.
 - (2) Enhanced weather reliability service standard. A generation entity may elect to maintain weather preparation measures that reasonably ensure its resource can provide service in accordance with a valid dispatch instruction at the resource's applicable rated capability as defined by ERCOT when the weather zone in which the resource is located is forecasted to experience under the 98th percentile of each of the extreme weather scenarios specified in the weather study approved by the commission under subsection (c) of this section. A resource that ERCOT shall procure enhanced weather reliability service from resources that it certifies as capable of meetings this standard may qualify to provide an enhanced weather reliability service procured by ERCOT.

- (3) Black Start Service (BSS) weather reliability standard. For a resource that provides BSS, a generation entity must maintain weather preparation measures that reasonably ensure the resource can provide service at the resource's applicable rated capability under the 99.7th percentile of the extreme weather scenarios specified in the weather study approved by the commission under subsection (e) of this section.
- (4) New resource. A generation entity must maintain weather preparation measures that reasonably ensure that its new resource can meet the basic weather reliability standard under paragraph (1) of this subsection before it commences commercial operations. The generation entity must submit to ERCOT a compliance study as described in paragraph (f)(1) of this section by a deadline specified by ERCOT.
- (e) Implementation of weather reliability standards for a generation entity.
 - (1) Implementation of basic weather reliability standard. A generation entity must meet the basic weather reliability standard under subsection (d) of this section upon the effective date of this rule.by the following deadlines:
 - (A) For each resource with more than 650 megawatts (MW) of nameplate capacity in operation on January 1, 2022, no later than November 30, 2022;
 - (B) For each resource with at least 250 MW and no more than 650 MW of nameplate capacity in operation on January 1, 2022, no later than November 30, 2023; and
 - (C) For each resource with less than 250 of nameplate capacity in operation on January 1, 2022, no later than November 30, 2024.
 - (2) Implementation of enhanced weather reliability service standard. A generation entity electing to meet the enhanced weather reliability service standard under subsection (d) of

- this section must meet the standard before providing a service requiring the standard and by a specific deadline specified by ERCOT.
- (3) Implementation of BSS weather reliability standard. A resource that is contracted to provide BSS in the ERCOT power region must comply with the applicable weather reliability standard under subsection (d) of this section no later than November 30, 2023.
- (4) Extension of deadline. A generation entity may petition the commission to extend the implementation deadline for a generation resource. The commission may approve the petition with or without conditions if the generation entity demonstrates that it used best efforts to meet the deadline.
- (f) Compliance with weather reliability standards for a generation entity.
 - (1) Compliance study. Each generation entity must submit to ERCOT a study that confirms compliance with the applicable weather reliability standard in subsection (d) for each resource in its control. The study must be conducted by a qualified professional engineer who is not an employee of the generation entity or affiliate.
 - (A) The study must contain the information that ERCOT determines by rule should be required and be submitted to ERCOT no later than the applicable implementation deadline in subsection (e) of this section.
 - (B) A generation entity must submit a new analysis no later than 60 days after any significant change affecting the ability of a resource to meet the applicable weather reliability standard in subsection (d) of this section.

(2) Annual report. Each generation entity must submit declarations of summer and winter weatherization preparations an annual report to ERCOT under timelines prescribed by ERCOT that includes all information and attestations required by the ERCOT Protocols. no later than November 1 of each year that addresses compliance with subsection (d) of this section. The report must include the name of the generation entity, a list of the generation entity's resources, a summary of activities related to compliance, and all other information prescribed by ERCOT in its market rules. The annual report must also include a notarized affidavit sworn to by the chief executive officer of the generation entity, attesting that each of the generation entity's resources is in compliance with subsection (d) of this section.

(g) Inspections for a Generation Entity.

(1) ERCOT inspections. ERCOT must implement an inspection program that reasonably determines whether the resources in the ERCOT power region are in compliance with subsection (d) of this section. ERCOT must implement an inspection schedule that ensures that each resource is inspected at least once every three years for compliance with subsection (d) of this section. ERCOT may conduct inspections more frequently than every three years and must prioritize in its inspection schedule any generation resource it determines is critical for electric grid reliability. ERCOT may also prioritize inspections of other resources, including a generation resource that has experienced a forced outage, forced derate, or failure to start during extreme weather conditions, or that has exhibited other vulnerabilities to weather conditions or deficiencies in weather emergency

preparedness. ERCOT has the discretion to determine the extent and content of particular inspections.

(2) ERCOT inspection report. ERCOT must provide a report on its inspection of a resource to the generation entity. The inspection report must address whether the resource was in compliance with subsection (d) of this section and, if it was not, provide the generation entity a reasonable period to cure the identified deficiencies. The cure period determined by ERCOT must consider what weather preparation measures the generation entity may be reasonably expected to have taken before ERCOT's inspection, the reliability risk of the resource's noncompliance, and the complexity of the weather preparation measures needed to cure the deficiency.

(h) Violations of weather reliability standards by a generation entity.

- (1) Administrative penalty. The commission will impose an administrative penalty on a generation entity that has violated subsection (d) of this section and does not cure the violation within a reasonable period of time.
- (2) Limitations on provision of BSS or any enhanced weather reliability service. A generation entity must not use a resource to provide BSS or an enhanced weather reliability service implemented under subsection (d) of this section if the resource has been found by ERCOT to have violated compliance with subsection (d) of this section until ERCOT has determined that the violation has been cured. However, ERCOT may allow the continued use of the resource for the service if it determines that the resource is needed for reliability reasons and must direct the generation entity to use best efforts to expeditiously cure the violation

- (3) Weather-related failures to provide service. For a resource that experiences repeated or major weather-related forced interruptions of service, including forced outages, derates, or maintenance-related outages that result in a failure to comply with subsection (d) of this section, the generation entity must contract with a qualified professional engineer who is not an employee of the generation entity or its affiliate to assess its weather preparation measures, plans, procedures, and operations and submit the assessment to the commission and ERCOT. ERCOT must adopt rules that specify the circumstances for which this requirement applies and specify the scope and contents of the assessment. A generation entity may be subject to additional inspections by ERCOT and referral to the commission for enforcement of any violation of the commission's rules and failure to cure the identified deficiencies within a reasonable period of time.
- (i) Weather reliability standards for a transmission service provider. A transmission service provider must maintain weather preparation measures that reasonably ensure that its transmission system can provide service at the system's applicable rated capabilities as defined by ERCOT under the 98th percentile of each of the extreme weather scenarios specified in the weather study approved by the commission under subsection (c) of this section and must, at a minimum, be in conformance with good utility practice.
- (j) Implementation of weather reliability standards for transmission facilities. A transmission service provider's transmission system must meet subsection (i) of this section no later than November 30, 2023, except for transmission facilities outside of a substation or switching substation that were designed in conformance with good utility practice but are insufficient to

meet the standard. The provider must submit to the commission and ERCOT by November 30, 2023 a report that details any facilities that were designed in conformance with good utility practice but are insufficient to meet the standard and a detailed description of any plan with cost estimates to rebuild the facilities to bring them into compliance with the standard. ERCOT may recommend and the commission may order the rebuilding of facilities to bring them into compliance with the standard.

(k) Compliance with weather reliability standards by a transmission service provider. A transmission service provider must submit an annual report to ERCOT no later than November 1 of each year that addresses compliance with subsection (i) of this section. The report must include the name of the provider, a summary of activities related to compliance, and all other information prescribed by ERCOT in its market rules. The annual report must also include a notarized affidavit sworn to by the chief executive officer of the provider that its transmission system is in compliance with the weather reliability standard in subsection (i) of this section.

(1) Inspections for a transmission service provider.

(1) ERCOT inspections. ERCOT must implement an inspection program that reasonably determines whether the transmission systems in the ERCOT power region are in compliance with subsection (i) of this section. ERCOT must implement an inspection schedule that ensures that each transmission system is inspected at least once every three years for compliance with subsection (i) of this section. ERCOT may conduct inspections more frequently than every three years and must prioritize in its inspection schedule any transmission facility it determines is critical for reliability. ERCOT may also prioritize

other transmission facilities for inspection, including a transmission facility that has experienced a forced outage or other failures during extreme weather conditions, or has otherwise exhibited other vulnerabilities to weather conditions or deficiencies in weather emergency preparedness. ERCOT has the discretion to determine the extent and content of particular inspections.

(2) ERCOT inspection report. ERCOT must provide a report on its inspection of transmission facilities to the transmission service provider. The inspection report must address whether the facilities were in compliance with subsection (i) of this section and, if they were not, provide the transmission service provider a reasonable period to cure the identified deficiencies. The cure period determined by ERCOT must consider what weather preparation measures the provider may be reasonably expected to have taken before ERCOT's inspection, the reliability risk of a forced outage of the facilities, and the complexity of the weather preparation measures needed to cure the deficiencies.

(m) Violations of reliability standards for a transmission service provider.

- (1) Administrative penalty. The commission will impose an administrative penalty on a transmission service provider that has violated a weather reliability standard in subsection(i) of this section and does not cure the violation within a reasonable period of time.
- (2) Operation during cure period. A transmission service provider may continue to operate its transmission facility during the cure period unless otherwise determined by ERCOT.
- (3) Weather-related failures to provide service. For a transmission system that experiences repeated or major weather-related forced interruptions of service, including forced outages, derates, or maintenance-related outages that result in a failure to comply with subsection

(d) of this section, the transmission service provider must have a qualified professional engineer assess its weather preparation measures, plans, procedures, and operations and submit the assessment to the commission and ERCOT. ERCOT must adopt rules that specify the circumstances for which this requirement applies and specify the scope and contents of the assessment. A provider may be subject to additional inspections by ERCOT and referral to the commission for enforcement of any violation of the commission's rules and failure to cure the identified deficiencies within a reasonable period of time.